

5914
Work Order ID 78159

78159

Page 1

December-29-11 10:38:59 AM

Item ID: D6101-003 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Saddle Billet, 7075
 Start Date: 29/12/2011 Start Qty: 60.00 ***60*** Cust Item ID:
 Required Date: 06/02/2012 Req'd Qty: 60.00 ***60*** Customer:
 Reference:

Approvals: Process Plan: M.L.S Date: 11/12/29 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D6101	Rev B

100 PURCHASING 0.00
100
 Purchasing Memo 0.00
 Purchasing Issue P/O: 15740
 a) Description: Alluminum billet
 b) 7.875" x 6.250" x 2.00" thick
 c) Tolerance on all dimensions are +0.030"/-0.000"
 d) Grain direction along 7.875" length
 e) Material: 7075-T7351 (QQ-A-250/12)
 f) Material certification required

110 Receive & Inspect for Damage & Mat'l Certs 0.00
110
 Packaging Memo 0.00
 Packaging Ensure material certification is attached

11/12/29
11/12/29
60
11/12/29
60

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 78159

78159

Page 2

December-29-11 10:38:59 AM

Item ID: D6101-003 Accept: ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Saddle Billet, 7075
 Start Date: 29/12/2011 Start Qty: 60.00 ***60*** Cust Item ID:
 Required Date: 06/02/2012 Req'd Qty: 60.00 ***60*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC6- Inspect dimensions to drawing Memo Ensure Material certification comply to Dwg D6101	0.00 0.00	<i>mk 12/01/23</i>			<u>60</u>	<u>0</u>		
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: <i>MAT 43(10)</i> <i>MAT 42(42)</i> Memo <i>MAT 40(8)</i>	0.00 0.00	<i>mk 12/01/23</i>			<u>60</u>	<u>0</u>		
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00	<i>12/11/24</i>						<i>[Signature]</i>

12-01-24
60

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

December-29-11 10:39:03 AM

Page 1

Work Order ID: 78159

78159

Parent Item: D6101-003

D6101-003

Parent Item Name: Saddle Billet, 7075

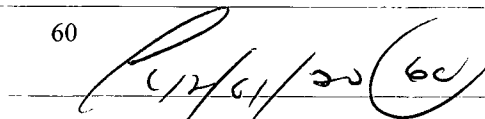
Start Date: 29/12/2011

Required Date: 06/02/2012

Start Qty: 60.00

Required Qty: 60.00

Comments: IPP A: 01.05.04New IssueEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-003P *D6101-003P* 7075-T7351 2X6.25X7.875		Purchased	No			110	Each	0.0000	1	60			
									**				

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

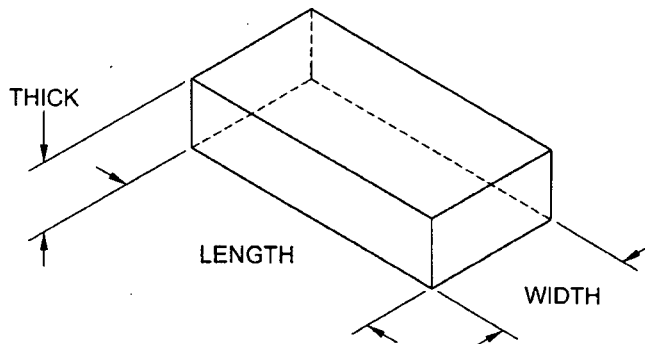
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

SPECIFICATION CONTROL DRAWING



STANDARD
REFERENCE
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 78159

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED

09/07/15/WP

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No: 1135332

Expédié de / Ship From: A. M. Castle & Co. KENT 20826 68TH AVENUE SOUTH KENT, WA 98032		Vendu à / Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Expédié à / Ship To: WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2 CAN		Livré à / Deliver To: WILL CALL-MONTREAL 835 SELKIRK AVENUE POINTE CLAIRE, QC H9R 3S2 CA	
Date d'expédition / Date Shipped 11-JAN-2012	F.O.B. ORIGIN	Modalités de transport / Freight Terms Prepaid		Transporteur / Carrier ROADWAY		No du Bon de connaissance / BOL No 1135332-2	

Détails d'expédition / Shipment Details

Destination finale / Final Destination Branch - KEN

N° de commande / Order No 1918887	N° de ligne / Line No 1	N° d'article / Item No 752237.MO	Description 2.0000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 6.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) X 7.875 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12				
N° de bon de commande / Purchase Order No 15760		Nbre de pièces / Part Number YOUR ITEM NUMBER: D6101-003		Qté commandée / Ordered Qty 60.00 PCS		Qté Facturée / Invoice Qty 60.0000 PCS	
Détails / Details							
N° de livraison / Delivery No :	Usine / Mill	No de coulée / Heat Number	Code méc / Mech Id	Pièces / PCS	Largeur (Pouce) / Width (IN)	Longueur (Pouce) / Length (IN)	Qté expédiée / Shipped Qty(LBS)
113805331		368527A8		4			
113805331		465120A4		4			40.64
113805331		440514A8		2			40.64
113805331		443780A2		34			20.32
113805331		443773A7		6			345.47
							60.97

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.
Date Printed: 19-JAN-2012 02:31:48 PM

**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 2 of 2

113805331		368527A8		8			
113805331		465120A4		2			81.29
							20.32
<p>Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des États-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.</p> <p>These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.</p> <p>Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.</p> <p>We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.</p>							
Ce matériel a été reçu et inspecté par Reviewed by Authorized Castle Metals Representative:				Date:		Name:	

SHIP TO:

CASTLE METALS AEROSPACE
4611 EAST 31ST STREET
WICHITA, KS 67210

SOLD TO:

CAS AERO% A M CASTLE METALS
ATTN:BOB OHR % ACCTS PAYABLES
3400 NORTH WOLF RD
FRANKLIN PARK, IL 60131

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4146138

CUSTOMER PO NUMBER: 5655		WORK PACKAGE:		CUSTOMER PART NUMBER: 750633		SHIP RUN/LOAD ID: 101406/18		GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1074546	LINE ITEM: 1	SHIP DATE: 4-NOV-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE			
WEIGHT SHIPPED: 14494 LB	QUANTITY: 10 PCS EST.	B/L NUMBER: 2020121		GAUGE: 2.0000 IN		WIDTH: 48.500 IN	LENGTH: 144.500 IN		

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7055/RevA
DPS 4.713/RevAH
GSS16100/RevG

AMS-QQ-A-250/12
ASTM B 594/Rev06
CMMP 025/RevR
EAC MS1011/RevE
MMS 159/RevN

AMS-STD-2154
BAC 5439/RevH
CSTI 006/RevC
GAMPS 9101/RevB
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 443780A2 Cast 186

Drop 09

Ingot 2

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.8 : 71.7 (488 : 494)	59.2 : 60.2 (408 : 415)	9.7 : 10.8

(ASTM E1004)

Conductivity %IACS :	40.9 Min	40.9 Max
(MS/M) :	23.7 Min	23.7 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.09	0.19	1.4	0.02	2.5	0.19	5.7	0.03	0.01	0.01	TOT 0.04

**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4146138

Lot: 443802A4 Cast 186

Drop 04

Ingot 1

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.9 : 72.1 (496 : 497)	61.4 : 61.6 (423 : 425)	12.1 : 12.2

(ASTM E1004)

Conductivity %IACS :	40.3 Min	42.3 Max
(MS/M) :	23.4 Min	24.5 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.19	1.4	0.03	2.4	0.19	5.8	0.03	0.01	0.01	TOT 0.04

Lot: 443834A7 Cast 186

Drop 17

Ingot 4

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	70.7 : 71.7 (487 : 494)	59.9 : 61.3 (413 : 423)	7.9 : 10.5

(ASTM E1004)

Conductivity %IACS :	40.4 Min	40.6 Max
(MS/M) :	23.4 Min	23.5 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.18	1.5	0.03	2.4	0.20	5.5	0.03	0.01	0.01	TOT 0.05

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

TEST NOTES

7075-T7351 plate 3.001-3.500" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-1. 7075-T7351 plate 3.501-5.000" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-2.

Metal represented by this test report was immersion ultrasonically tested from one side and meets the Class A and Class B requirements of all specifications referenced on this test report.

**KAISER
ALUMINUM**

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4146138

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE U.S.A OR CANADA AND MANUFACTURED IN THE U.S.A , AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR

Bill Poy

**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4132944**SHIP TO:**A M CASTLE & CO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131**SOLD TO:**AM CASTLE & CO- SOLD TO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 01-48261		WORK PACKAGE:		CUSTOMER PART NUMBER: 6857 A97075-60		SHIP RUN/LOAD ID: 101310/15		GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1068623	LINE ITEM: 1	SHIP DATE: 20-JUN-2008	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE			
WEIGHT SHIPPED: 5752 LB	QUANTITY: 4 PCS EST.	B/L NUMBER: 2018282		GAUGE: 2.0000 IN		WIDTH: 48.500 IN	LENGTH: 144.500 IN		

Certified SpecificationsAMS 4078/RevG
ASTM B 209/Rev07
BSS 7055/RevA
DPS 4.713/RevAH
GSS16100/RevGAMS-QQ-A-250/12
ASTM B 594/Rev06
CMMP 025/RevR
EAC MS1011/RevE
MMS 159/RevNAMS-STD-2154
BAC 5439/RevH
CSTI 006/RevC
GAMPS 9101/RevB
PS 21211/RevK**Test Results**

Test Code: 4297

Lot: 440514A8 Cast 170

Drop 21

Ingot 5

(ASTM E8/B557)

Tensile:

Temper
T7351Dir / # Tests
LT / 2 (Min:Max)Ultimate KSI (MPA)
74.7 : 74.8
(515 : 516)Yield KSI (MPA)
62.4 : 62.8
(430 : 433)Elongation %
11.6 : 11.9

(ASTM E1004)

Conductivity %IACS :
(MS/M) :40.4 Min
23.4 Min40.5 Max
23.5 Max

(ASTM E1251)

Chemistry:

Actual

SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
0.09	0.16	1.5	0.03	2.5	0.20	5.7	0.03	0.01	0.01	TOT 0.04

CASTLE METALS CORP
DATE RCVD 6/24/08
IAC 6857
APPROVED BY A

**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586**CERTIFIED TEST REPORT**Serial Number
4132944

Lot: 440615A3 Cast 170

Drop 11

Ingot 1

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	73.4 : 73.6 (506 : 507)	61.5 : 62.0 (424 : 427)	11.9 : 12.2

(ASTM E1004)

Conductivity %IACS :	41.1 Min	41.3 Max
(MS/M) :	23.8 Min	24.0 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	TOT	OTHER
Actual	0.08	0.17	1.5	0.01	2.4	0.20	5.6	0.03	0.01	0.01		0.05

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

TEST NOTES

Metal represented by this test report was immersion ultrasonically tested from one side and meets the Class A and Class B requirements of all specifications referenced on this test report.

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE U.S.A OR CANADA AND MANUFACTURED IN THE U.S.A , AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR


SHIP TO:

CASTLE METALS AEROSPACE
20826 68TH AVENUE SOUTH
KENT, WA 98032

KAISER
ALUMINUM



Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

SOLD TO:

CAS AERO% A M CASTLE METALS
ATTN:BOB OHR % ACCTS PAYABLES
3400 NORTH WOLF RD
FRANKLIN PARK, IL 60131

CERTIFIED TEST REPORT

Serial Number

4160125

CUSTOMER PO NUMBER: 8178		WORK PACKAGE:	CUSTOMER PART NUMBER: 750629 AMC A97075-60		SHIP RUN/LOAD ID: 101518/5	GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1081754	LINE ITEM: 1	SHIP DATE: 16-APR-2009	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE	
WEIGHT SHIPPED: 6606 LB	QUANTITY: 6 PCS EST.	B/L NUMBER: 2022311	GAUGE: 2.0000 IN		WIDTH: 57.000 IN	LENGTH: 94.000 IN	

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev07
BSS 7055/RevA
GSS16100/RevG/Amd1

AMS-QQ-A-250/12
ASTM B 594/Rev06
CSTI 006/RevC
MMS 159/RevN

AMS-STD-2154
BAC 5439/RevH
DPS 4.713/RevAH
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 465120A4 Cast 218

Drop 11

Ingot 3

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.3 : 71.8 (492 : 495)	59.4 : 60.0 (410 : 414)	11.7 : 12.1

(ASTM E1004)

Conductivity %IACS :	40.6 Min	40.9 Max
(MS/M) :	23.5 Min	23.7 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.10	0.20	1.5	0.04	2.5	0.19	5.9	0.03	0.01	0.02	TOT 0.06

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4160125

TEST NOTES

7075-T7351 plate 3.001-3.500" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-1. 7075-T7351 plate 3.501-5.000" thick, if ultrasonically inspected, meets requirements of CMMPO25 per SDR CMMPO25-KaiserT-2.

Metal represented by this test report was immersion ultrasonically tested from one side and meets the Class A and Class B requirements of all specifications referenced on this test report.

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTIRE ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR



SHIP TO:

CASTLE METALS
C/O CUTTER PRECISION METALS
1208 NO. 4TH AVE
KENT, WA 98032

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number

4099991

SOLD TO:

AM CASTLE & CO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 45-24425		WORK PACKAGE:	CUSTOMER PART NUMBER: 6856 A97075-60		SHIP RUN/LOAD ID: 100996/18	GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1051199	LINE ITEM: 1	SHIP DATE: 14-JUN-2007	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: MILL FINISH PLATE	
WEIGHT SHIPPED: 7804 LB	QUANTITY: 8 PCS EST.	B/L NUMBER: 2013258		GAUGE: 2.0000 IN	WIDTH: 58.000 IN	LENGTH: 81.500 IN	

Certified Specifications

AMS 4078/RevG
ASTM B 209/Rev06
BSS 7055/RevA
GSS16100/RevG
PS 21211/RevK

AMS-QQ-A-250/12
ASTM B 594/Rev06
CSTI 006/RevC
MIL-STD-2154

AMS-STD-2154
BAC 5439/RevH
DPS 4.713/RevN/AmdAF
MMS 159/RevN

Test Code: 4297

Test Results

Lot: 368527A8 Cast 978

Drop 41

Ingot 1

(ASTM E8/B557)

Tensile: Temper
T7351

Dir / # Tests
LT / 2 (Min:Max)

Ultimate KSI (MPA)
75.0 : 76.4
(517 : 527)

Yield KSI (MPA)
64.4 : 65.6
(444 : 452)

Elongation %
11.8 : 12.0

(ASTM E1004)

Conductivity %IACS : 41.0 Min
(MS/M) : 23.8 Min

41.6 Max
24.1 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.20	1.4	0.01	2.6	0.20	5.9	0.01	0.01	0.00	TOT 0.03

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

KAISER
ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4099991

TEST NOTES

Metal represented by this test report was Immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.

DATE REC'D	CASTLE METALS - KENT
REC'D FROM	CUST.
APPROVED BY	CUST. P.O.
	AISC S/O
	TR # 36857708
WE HEREBY CERTIFY THAT THESE ARE CORRECT	
COPIES OF REPORTS NOW ON FILE AT A.M. CASTLE & CO.	
JAL 6856	

CERTIFICATION

KAISER ALUMINUM & CHEMICAL CORPORATION (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED AND MANUFACTURED IN THE U.S.A. AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM & CHEMICAL CORPORATION LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR
Bill Poy

SHIP TO:

CASTLE METALS AEROSPACE
20826 68TH AVE. SOUTH
KENT, WA 98032

**KAISER
ALUMINUM**

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4144547

SOLD TO:

AM CASTLE & CO- SOLD TO
3400 NO. WOLF ROAD
FRANKLIN PARK, IL 60131

CUSTOMER PO NUMBER: 45-25041		WORK PACKAGE:		CUSTOMER PART NUMBER: 6857 A97075-80			SHIP RUN/LOAD ID: 101303/10		GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1073740		LINE ITEM: 1	SHIP DATE: 16-OCT-2008		ALLOY: 7075	CLAD: BARE	TEMPER: T7351		PRODUCT DESCRIPTION: MILL FINISH PLATE	
WEIGHT SHIPPED: 5800 LB		QUANTITY: 4 PCS EST.		B/L NUMBER: 2019871		GAUGE: 2.0000 IN ✓		WIDTH: 48.500 IN		LENGTH: 144.500 IN

Certified Specifications

AMS 4078/RevG
ASTM B 209/RevD7
BSS 7055/RevA
DPS 4.713/RevAH
GSS18100/RevG

AMS-QQ-A-250/12
ASTM B 594/RevQ6
CMMP Q25/RevR
EAC MS1011/RevE
MMS 159/RevN

AMS-STD-2154
BAC 5439/RevH
CSTI 006/RevC
GAMPS 9101/RevB
PS 21211/RevK

Test Code: 4297

Test Results

Lot: 443773A7 Cast 186

Drop 10

Ingot 2

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPa)	Yield KSI (MPa)	Elongation %
	T7351	LT / 2 (Min:Max)	72.7 : 73.5 (501 : 507)	61.7 : 62.7 (425 : 432)	12.2 : 12.4

(ASTM E1004)

Conductivity %IACS :	41.1 Min	41.4 Max
(MS/M) :	23.8 Min	24.0 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.16	1.4	0.02	2.4	0.19	5.7	0.02	0.01	0.01	TOT 0.04

CASTLE METALS - KENT

DATE REC'D 10-21-08 CUST. _____

REC'D FROM KAISER CUST. P.O. _____

APPROVED BY AM AMC S/D _____

TR # 443773A7/443920A4

WE HEREBY CERTIFY THAT THESE ARE CORRECT
COPIES OF REPORTS NOW ON FILE AT A.M. CASTLE & CO.
BY: AM JAC: U857



6-23-97

**KAISER
ALUMINUM**Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586T-039 P0007/0013 F-053
CERTIFIED TEST REPORTSerial Number
4144547

Lot: 443920A4 Cast 188

Drop 10

Ingot 1

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.4 : 72.7 (499 : 501)	61.7 : 62.1 (425 : 428)	11.7 : 11.9

(ASTM E1004)

Conductivity %IACS :	41.2 Min	41.9 Max
(MS/M) :	23.9 Min	24.3 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.16	1.4	0.02	2.4	0.19	5.7	0.02	0.01	0.01	TOT 0.04

ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

TEST NOTES

Metal represented by this test report was immersion
ultrasonically tested from one side and meets the Class A
and Class B requirements of all specifications referenced
on this test report.

CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE U.S.A OR CANADA AND
MANUFACTURED IN THE U.S.A. AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS
INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD
GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL,
WITHOUT THE WRITTEN APPROVAL OF ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULANT STATEMENTS
OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR